



Public Investments that Positively Impact Child and Family Outcomes: What the Research Tells Us

We all want a healthy, prosperous and dynamic future for our country. Research shows that investing wisely in our nation's children and youth is one of the best ways to ensure this bright future. Organizations including the U.S. Business Roundtable and the Center for Economic Development, and economists such as Nobel Laureate James Heckman and Art Rolnick explain that wise public investment in children not only increases their favorable developmental outcomes but also provides their parents and society with great benefits. Providing education and intervention supports to children not only improves their academic success, but also reduces crime and increases workforce productivity. In short, investing in our children reduces poverty and strengthens our economy.

But how do we determine which investments in children yield the greatest benefits over the long term? In this paper, we examine the effectiveness of select education and intervention programs that demonstrate proven results and desirable outcomes including a child's readiness for school, early achievement and later life experiences.

Learning Begins at Birth—Too many people mistakenly believe that infants and

While 85% of a child's core brain structure is formed by age three, less than 4% of public investments on education and development have occurred by that time.

Early Learning Left Out: Closing the Investment Gap for America's Youngest Children, 2nd edition, Voices for America's Children and the Child and Family Policy Center, 2005.

toddlers are too young to learn. However, research shows us that a child's brain develops dynamically and rapidly in the first five years of life. During this time, children undergo tremendous intellectual, emotional and physical development and hence providing them with safe, loving and enriching environments during this time is vital to their development.¹

Research also shows that poverty-related stressors during a child's early years increases the possibility that children will be less socially and emotionally competent and have more behavioral problems.² For these children, waiting until they enter kindergarten may be too late. Intervening early by

¹ Jack Shonkoff and Deborah Phillips (eds), *From Neurons to Neighborhoods: The Science of Early Childhood Development*, National Academy Press, October 3, 2000.

² West Denton and Reaney, *The Kindergarten Year: Findings From the Early Longitudinal Study*, Kindergarten Class of 1998-1999, U.S. Department of Education, 2001.

linking young children to essential services and providing parents with education or other support mechanisms has proven to be more effective than intervening later. Such interventions and family supports enrich a child's life at the most critical time, ensuring that when they get to kindergarten, they arrive healthy, happy and ready to learn and succeed at school.

Quality of Early Intervention and Education Programs—While research continues to support parents as the primary influence on child development, in reality, reforms in the country's welfare support and an increase in the number of women entering the workforce has expanded the need for affordable, high-quality education and care programs. Research over recent decades shows that high quality early intervention and education programs enhance a child's early development. While disadvantaged children gain the most from quality early interventions, such programs, in fact, benefit all children and benefits often last into adulthood. For example, children with access to quality programs, including the Chicago Child-Parent Centers, Head Start, Carolina Abecedarian or the High/Scope Perry Preschool projects show better academic and cognitive skills; are more likely to finish high school and college; commit fewer crimes; and have higher incomes. Equally importantly, such high quality programs also benefit parents, increasing their chances of continuing their own education and keeping their jobs.

High quality early intervention and education programs result in reduced crime, lowered incidents of substance abuse, improved educational outcomes, higher test scores and graduation rates, decreased teen pregnancy, reduced teen suicide attempts, lowered child abuse or neglect and reduced domestic violence. Being both socially advantageous and economically effective, these programs target the problem before it begins. Early intervention and prevention works to save tax dollars but also productively adds to the quality of life for each member of our society. Starting early allows this process to begin as soon as possible. However, effectiveness often hinges upon the quality of the program.

The quality of child developmental programs is dependent on care givers' behaviors and characteristics; structural components (such as class size and staff-child ratio); age-appropriate activities for children; the kinds of experiences and interactions they have; and the physical facilities of the program. When children are enrolled in programs where adult-to-child ratios are small and caregivers positively interact with children, they appear happier and display better cognitive, language and social competencies on tests.³ Research also suggests that teacher training and qualifications have a significant impact on the quality of early education programs. Teachers with bachelor's degrees and certification (especially in early childhood development) tend to more positively affect children's long-term educational outcomes than less-qualified teachers.⁴ Strong relationships with care givers and a stable professional staff, with low turnover, have also

³ Debra Ackerman, *Getting Teachers From Here to There: Examining Issues Related to an Early Care and Education Teacher Policy*, Early Childhood Research and Practice, v. 7, n. 4, Spring 2005.

⁴ Deborah Lowe Vandall and Barbara Wolfe, "Child Care Quality: Does It Matter and Does It Need to be Improved?" in Bogenschneider et al, *Early Childhood Care and Education: What Are States Doing?*, Madison, WI: University of Wisconsin Center for Excellence in Family Studies, 2002.

demonstrated a beneficial impact on children. However, the ability to attract and retain qualified staff depends on adequate compensation and professional training opportunities, both of which remain frequently inadequate.⁵ Lack of adequate resources is particularly troubling as poor teachers and low-quality programs can actually hinder child development.

According to the National Institute of Child Health and Human Development (NICHD), the quality of early care in the United States is mixed. Quality of child care is mostly fair (53%), sometimes good (30%) and rarely excellent (9%). Poor quality child care is more evident in centers serving infants and toddlers as opposed to older children.⁶

Similarly, research by the Frank Porter Graham (FPG) Child Development Institute in North Carolina studying the impact of state-sponsored preschool on early child development found that preschool classrooms around the country were of uneven quality. Often, the most at-risk children were taught by the least qualified teachers. And even though preschool classrooms adhered to high programs standards including small class sizes, adequate adult-to-child ratios and qualified teachers, classroom quality was lower than anticipated. This is partially because research included part-time preschool programs, in which routine activities like arriving, departing and snacking can take up a large portion of the day, leaving less time for learning and activities. Additionally, research found that teachers in many early education settings focused on superficial instruction such as giving directions and assigning routine tasks, as opposed to engaging children in age-appropriate activities that help them reflect, question, predict, hypothesize and problem solve.⁷

In spite of the inconsistent quality of early experiences, researchers at the FPG Child Development Institute explain that by-and-large preschool experiences do benefit low-income children, stopping their academic decline and helping them catch up with their counterparts. In short, children receiving early education opportunities make small, but meaningful, academic gains.⁸

Impact of High Quality Child- and Family-Focused Early Interventions—High quality early interventions that offer programs and services to both children and their families have the greatest impact on child development and parental behavior, especially

⁵ Martha Zaslow et al, “The Role of Professional Development in Creating a High Quality Preschool Education,” paper presented at the Brookings-University of North Carolina Conference on Preschool Education, September 2004; Walter Gilliam and Crista Marchesseault, “From Capitols to Classrooms, Policies and Practice: State Funded Prekindergarten at the Classroom Level (Part 1: Who’s Teaching Our Youngest Students?),” National Prekindergarten Study, Yale University Child Study Center, March 2005.

⁶ From Deborah Lowe Vandall and Barbara Wolfe, “Child Care Quality: Does It Matter and Does It Need to be Improved?” in Bogenschneider et al, *Early Childhood Care and Education: What Are States Doing?*, Madison, WI: University of Wisconsin Center for Excellence in Family Studies, 2002 (data cited originally in NICHD Early Child Care Research Network, Characteristics and Quality of Child Care for Toddlers and Preschoolers, Applied Developmental Science, v. 4, 2000).

⁷ Early Developments, NCEDL Pre-Kindergarten Study, Frank Porter Graham Child Development Institute (The University of North Carolina at Chapel Hill), v.9, n.1, Spring 2005.

⁸ Early Developments, NCEDL Pre-Kindergarten Study, Frank Porter Graham Child Development Institute (The University of North Carolina at Chapel Hill), v.9, n.1, Spring 2005.

for-those families considered at-risk. Intervention programs that take into consideration families' varied socio-economic, language, educational and cultural backgrounds tend to be more effective than those that just offer services based on generic family supports. Also, early intervention programs that hire qualified staff, provide rigorous staff training, offer a range of services such as home visits, parent education and early literacy

According to a study conducted by Rutgers University, providing disadvantaged students with high quality pre-school results in great economic benefits—savings to society from reduced crime alone adds up to nearly \$70,000 per low-income child receiving at least two years of quality pre-k. When factoring welfare, tax and other savings, these benefits amount to \$88,000 over time.

--*The Economics of Education: Public Benefits of High-Quality Preschool Education for Low-Income Children*, Entergy Corporation, 2002.

programs, and those that place a premium on quality show strong positive effects and measurable outcomes. These outcomes include higher academic achievement and attainment; improved cognitive, social and emotional development; improved home environment; and less child abuse. Societal benefits such as lower crime, lower healthcare costs and increased employment are also associated with quality intervention programs. Recent findings from quality child- and family-interventions are highlighted below in more detail:

- **Head Start**—Head Start and Early Head Start are comprehensive child development programs that serve children from birth to age 5, pregnant women, and their families, and are designed to ensure that low-income children start school ready. The U.S. Department of Health and Human Services' (HHS) Head Start Impact Study shows the program helps disadvantaged

children narrow the gap in some areas of academic achievement.⁹ Specifically, the study found positive outcomes for 3- and 4-years olds enrolled in Head Start in pre-reading and pre-writing. Head Start enrollees also had more access to dental care, fewer behavioral problems, better overall physical health and less hyperactivity. The study also found better parenting of children enrolled in Head Start—parents are more likely to read to their kids and less likely to use corporal punishment. No effect, however, was found on oral comprehension, phonological awareness and early math.¹⁰

Positive outcomes discussed in the Head Start Impact Study are consistent with past Head Start evaluations. Such evaluations show that children who attend Head Start are better prepared to succeed in school than if they had not attended the program. Evaluations also found that participants narrowed the achievement gap in vocabulary and writing skills, improved social skills and showed continual improvement in word knowledge, math

⁹ Data in the first year report covers only one school year period from the Fall 2002 and Spring 2003. The study is the first randomized experiment (the gold standard of research) testing Head Start's effect on children.

¹⁰ Head Start Impact Study, First Year Findings, U.S. Department of Health and Human Services, June 2005; Placing the First-Year Findings of the National Head Start Impact Study in Context, Society for Research in Child Development, 2005.

skills, writing skills and letter recognition. By the end of kindergarten, Head Start graduates had nearly closed the achievement gap in early reading and writing.¹¹

While short-term benefits of Head Start generally point to improved test scores, less is known about lasting benefits because there is no long-term, longitudinal data on the program that contains information on both childhood participation and socio-economic status in adulthood. However, a paper examining the long-term impact of Head Start using non-experimental data¹² found that participation increases social and economic benefits that last into adulthood. Lasting benefits include increased high school graduation, less grade retention or need for special education and less crime.¹³

- **Early Head Start**—Similarly, Early Head Start has proven effective in ensuring that young children start preschool healthy, curious and ready to learn. Research and evaluations¹⁴ consistently found favorable outcomes across various demographic groups of young children enrolled in Early Head Start, with larger impacts for certain subgroups. In particular, Early Head Start improves outcomes for 3-year old children through stronger cognitive, language and social-emotional development. Parent outcomes include progress toward self sufficiency, better parenting behaviors and home environments, more reading to children, increased education and job training, and fewer incidences of physical punishment such as spankings.¹⁵

Service delivery through both center- and home-based programs show benefits. Home-based programs that tend to target parenting rather than child outcomes, fostered more stimulating home environments, more bedtime reading, increased parental knowledge of child development, less parenting stress and greater involvement in education and training activities.¹⁶ Center-based programs consistently enhanced a child's cognitive development and parenting outcomes, while reducing negative social-emotional development. The strongest positive outcomes for both children and parents, however, are seen when a mixed approach is taken,

¹¹ Head Start FACES: Longitudinal Findings on Program Performance, Third Progress Report, U.S. Department of Health and Human Services, 2001; Head Start FACES 2000: A Whole Child Perspective on Program Perspectives, Fourth Progress Report, U.S. Department of Health and Human Services, 2003; Head Start FACES 2000: A Whole Child Perspective on Program Perspectives, U.S. Department of Health and Human Services, 2000.

¹² Researchers used data drawn from the Panel Survey of Income Dynamics (PSID).

¹³ Eliana Garces, Duncan Thomas, and Janet Curie, "Longer-Term Effects of Head Start," *American Economic Review*, v. 92, n. 4, 2002.

¹⁴ The Early Head Start Research and Evaluation Project, 1996-2005, is a rigorous, large-scale, random-assignment evaluation of Early Head Start. Evaluations and research include an implementation study, an impact evaluation that investigated outcomes impact on children and families, a follow-up until kindergarten, and local research projects. Much of the research and evaluation discussed in this section draws upon findings from this project.

¹⁵ Evaluation conducted by Mathematica Policy Research Inc. and Columbia University's Center for Children and Families, in collaboration with the Early Head Start Research Consortium. Early Head Start Benefits Children and Families, U.S. Department of Health and Human Services, June 2002; Making a Difference in the Lives of Infants and Toddlers and Their Families: The Impacts of Early Head Start, Final Technical Report, U.S. Department of Health and Human Services, June 2002.

¹⁶ Early Head Start Home-Based Services: Research Brief, U.S. Department of Health and Human Services, December 2003.

combining home-visits (beginning at birth or even before) with a center-based preschool education.¹⁷

While less is known about the long-term impact of Early Head Start, the program does in fact, reduce risk factors and improve protective factors, which may support improved outcomes later in a child's life.¹⁸

After school programs cost approximately \$10,000 per participant but produce benefits that range from \$89,000 to \$129,000.

Alliance for Excellent Education, 2003.

- **High/Scope Perry Preschool Project**—The Perry Preschool program is a high-quality program that provides a clear picture of the long-term effects of early education on academic, social and economic outcomes. An outcomes report through age 40 confirms the benefits of investing in the education of young children, especially those living in poverty.

More than 35 years after they received a quality preschool education, participants are more likely to have graduated from high school, have higher incomes, more likely to hold a job, less likely to abuse illegal drugs and commit crimes. Compared to children not participating in the program, the children who were enrolled were 80% less likely to become chronic lawbreakers.¹⁹ Participants earned one-third more than non-participants, were more likely to have savings accounts, and generally owned homes and cars. The women who participated in the Perry Preschool program spent an average of only 32 months receiving welfare assistance versus an average of 50.7 months for those who did not.²⁰

Program success, in part, is attributed to qualified teachers who received training, served a small group of students and followed a quality educational model daily for three- and four-year olds. Teachers led children in self-initiated learning activities, and provided small- and large-group activities to foster child development. Teachers also visited participant's families weekly to discuss their child's development.²¹

Curriculum is another important determinant of program success. Research on early education curricula found that low-income children experience fewer emotional problems and felony arrests if they attended a preschool program that used the Perry Preschool or traditional nursery school model. The Perry Preschool Program found that at age 40

¹⁷ Making a Difference in the Lives of Infants and Toddlers and Their Families: The Impacts of Early Head Start, Final Technical Report, U.S. Department of Health and Human Services, June 2002.

¹⁸ Head Start Impact Study, First Year Findings, U.S. Department of Health and Human Services, June 2005; Placing the First-Year Findings of the National Head Start Impact Study in Context, Society for Research in Child Development, 2005; Making a Difference in the Lives of Infants and Toddlers and Their Families: The Impacts of Early Head Start, Final Technical Report, U.S. Department of Health and Human Services, June 2002.

¹⁹ Stephanie Schaefer, David Kass, Mary Small and Jeff Kirsh, *Head Start Cuts Crime in Maine*, Fight Crime: Invest in Kids Maine, 2006.

²⁰ Stephanie Schaefer, David Kass, Mary Small and Jeff Kirsh, *Head Start Cuts Crime in Maine*, Fight Crime: Invest in Kids Maine, 2006.

²¹ Lawrence Schweinhart, *The High/Scope Perry Preschool Study Through Age 40: Summary, Conclusions and Frequently Asked Questions*, High/Scope Educational Research Foundation, 2005.

those who did not attend the program were 70 times as likely to be arrested for violent crimes and were also more likely to abuse illegal drugs.²² This model emphasizes children's self-initiated activities that aid in child development, as opposed to the direct

Some form of home visiting programs that target high-risk and/or low-income mothers and children are also effective, returning from \$6,000 to \$17,200 per youth.

Benefits and Costs of Prevention and Early Intervention Programs for Youth, Washington State Institute for Public Policy, 2004.

instruction model which teaches children academic skills and rewards them for correct answers. In fact, Head Start children in classes that used the Perry Preschool curricula showed an improvement in letter and word identification, exhibited cooperative classroom behaviors and showed decreased behavioral problems.²³

Researchers involved with the Perry Preschool Program conclude that Head Start

and other state preschool or child care programs can have the same effects on child development if programs include certain criteria including teachers with bachelor's degrees, home visits, a high-quality education program that engages children, high standards, etc.²⁴

- **Chicago's Child-Parent Centers (CPC)**—CPCs provide comprehensive childhood interventions for low-income children in Chicago. Evaluations of the program for low-income children show that lasting effects of early childhood education can stay with children until they are 20 years old. Long-term and large-scale evaluations²⁵ of the program find that children attending CPCs were more likely to finish high school, and were less likely to dropout from school, be placed in special education, be retained a grade or get arrested.²⁶ According to a study on the long-term effects of early childhood interventions on educational achievement and juvenile arrest published in the *Journal of the American Medical Association* in 2001, the program prevented 33,000 potential crimes and cut in half the abuse and neglect of children in the program. This reduction is important for society as well as for the individual child. Studies show that children with histories of abuse and neglect are more prone to be arrested as juveniles and commit crimes as adults. Youth who participated in CPCs, regardless of the amount of time, academically performed better than non-participants. The children who attended the program were 23% more likely to graduate from high school versus the children who did not participate. Non-participants had a 67% chance of being held back in school and were 71 % more

²² Stephanie Schaefer, David Kass, Mary Small and Jeff Kirsh, *Head Start Cuts Crime in Maine*, Fight Crime: Invest in Kids Maine, 2006.

²³ Lawrence Schweinhart, *The High/Scope Perry Preschool Study Through Age 40: Summary, Conclusions and Frequently Asked Questions*, High/Scope Educational Research Foundation, 2005.

²⁴ Transcript of Audio News Briefing on Perry Preschool Study, Age 40 Findings, High/Scope Educational Research Foundation, November 18, 2004.

²⁵ The Chicago Longitudinal Study (CLS) is long-term, ongoing study investigating the educational and social development of more than 1,500 low-income children who completed kindergarten programs within Chicago's public school system in 1986.

²⁶ "Chicago's Child-Parent Centers: Proving the Value of Early Childhood Education in the Real World," *Advocasey*, a publication of the Annie E. Casey Foundation, v.4, n. 1, Spring 2002.

likely to be placed in special education classes.²⁷ CPC participants had higher math and reading scores at age 15. Youth who participated in the CPC's preschool program had a 5-month gain in math and reading achievement by age 15.²⁸

The CPC program also includes family involvement through parent resource centers where parent participation is required for half a day each week. At this center, activities are tailored to parent needs including discussions on nutrition, health and safety. As a result, parents had positive attitudes toward the program, their children's school and education. Parent involvement and attitudes, combined with good communication between home and school, were associated with positive child outcomes including better school performance, and reading and math achievement in elementary grades.²⁹

- **Brookline Early Education Project (BEEP)**—BEEP is a model of integrated service delivery to parents of young children, grounded in health and education. Outcome studies of BEEP demonstrated the program's effectiveness during a child's early school years. A 25-year follow-up study that focused on educational attainment, economic well-being and health-related outcomes of early education programs indicates that well-designed, comprehensive early intervention and education programs produce long-term benefits including healthier and wealthier lives in adulthood.

Outcomes from a 25-year follow-up study show that young urban adults participating in BEEP have higher incomes, more years of education, are more likely to be employed, have better health and more positive health behaviors. They also tend to have fewer problems with depression. Participants who stayed in the program longer are doing more intellectually challenging work and those who received the highest level of services have better relationships with their parents.³⁰

Long-term benefits of BEEP are also consistent with other research that shows that participants in high-quality intervention programs cost taxpayers less in terms of needing subsidized health, education or public assistance services.

- **Nurse-Family Partnership (NFP)**—NFP is an evidence-based home visitation program that improves the health, self-sufficiency and well-being of low-income, first-time parents and their children. Long-term evaluations and follow-ups of the NFP program at 15 and 20 years show consistent and positive family outcomes related to maternal life and child development, especially for high-risk families.

²⁷ Stephanie Schaefer, David Kass, Mary Small and Jeff Kirsh, *Head Start Cuts Crime in Maine*, Fight Crime: Invest in Kids Maine, 2006.

²⁸ Newsletter of the Chicago Longitudinal Study, University of Wisconsin-Madison, June 2002.

²⁹ Newsletter of the Chicago Longitudinal Study, University of Wisconsin-Madison, June 2002.

³⁰ Judith Palfrey et al, The Brookline Early Education Project: A 25-Year Follow-up Study of a Family Centered Early health and Development Intervention, *Pediatrics*, v. 116, n. 1, July 2005; Early Intervention Programs Make for Healthier Adults: Program Participants Report Better Physical and Mental Health, The Robert Wood Johnson Foundation, July 5, 2005; Evaluating the Brookline Early Education Project (BEEP): Grant Result Report, The Robert Wood Johnson Foundation, March 2003.

Women visited by nurses had fewer subsequent pregnancies and births, longer relationships with their partners, less reliance on welfare and food stamps, increased participation in the workforce and reduced incidences of crime and delinquency. Additionally, because of its emphasis on prenatal health and changing maternal risk behaviors, research has found NFP programs to have a bearing on children's later development, especially intellectual functioning.³¹

Research also shows significant benefits for children, families and society at-large. For every dollar invested, the NFP program sees a return of \$2 to \$4 through reduced reliance on welfare and food stamps, fewer arrests, lower healthcare costs and improved birth outcomes (such as higher birth weight and fewer subsequent pregnancies).³² Children visited by nurses were more likely to receive formal, out-of-home care (such as Head Start, preschool or other early intervention), had higher IQs, scored better on language tests and had fewer behavioral problems including less aggression.³³

- ***Lynch Study for the Economic Policy Institute***—This study examines the cost and benefits of a nationwide program providing low-income three- and four-year-olds with high quality and comprehensive early childhood development. In addition to a high quality curriculum, the program included health and nutrition services, adult education and parenting classes. Although the Lynch Study estimated that the program would initially cost \$19 billion a year, it was determined that ultimately the program would reduce government costs related to special education, criminal justice and welfare benefits. Income earned and tax revenues also increased. When these savings and earnings are combined, the savings within 25 years was shown to be \$31 billion a year, and after 45 years savings reached \$61 billion a year.³⁴

Return on Investment: Benefits of Early Childhood Investments—In recent years, studies of well-designed, high-quality early childhood programs have consistently found that investing in our very young has important benefits for children, their families and the general public. While investing in such programs is expensive, often running into the millions and billions of dollars, the significant benefits of such programs tend to far outweigh the costs.³⁵

³¹ David Olds et al, "Effects of Nurse Home-Visiting on Maternal Life Course and Child Development: Age 6 Follow-up Results of a Randomized Trial," *Pediatrics*, v. 114, n. 6, December 2004; Debra Gordon, "New Data From Nurse-Family Partnership Shows Continued Success," *Advances*, a publication by the Robert Wood Johnson Foundation, 2005; "Rescue These Nurses: Endangered Program Provides Care for Kids," *Philadelphia Daily News*, April 25, 2005.

³² Steve Aos et al, *Benefits and Costs of Prevention and Early Intervention Programs for Youth*, Washington State Institute for Public Policy, Olympia, WA: 2004.

³³ David Olds et al, "Effects of Nurse Home-Visiting on Maternal Life Course and Child Development: Age 6 Follow-up Results of a Randomized Trial," *Pediatrics*, v. 114, n. 6, December 2004.

³⁴ Huge Payoff to Taxpayers From Early Investment in High quality Early Education for Nation's Poor Children, Oregon Center for Public Policy; Oct. 18, 2004.

³⁵ Robert Lynch, "Exceptional Returns: Economic, Fiscal and Social Benefits of Investment in Early Childhood Development," Economic Policy Institute, 2004; Robert Lynch, "Early Childhood Investment Yields Big Payoff," *Policy Perspectives*, a publication of WestEd, 2005.

An analysis of the economic, fiscal and social returns of high-quality early childhood programs like the High/Scope Perry Preschool Program, Abecedarian Early Childhood Intervention, Chicago Child-Parent Center and the Prenatal/Early Infancy Project found that conservatively, the benefit-cost ratios range between 3.78-to-1 and 8.74-to-1.³⁶ For example, a benefit-cost analysis of the Abecedarian Project found that taxpayers received a 4-to-1 return on their investment that included higher earnings for participants and their mothers, greater health benefits and longer lives, and costs savings for schools because

“Careful academic research demonstrates that tax dollars spent on early childhood development provide extraordinary returns compared with investments in the public, and even private, sector.”

Art Rolnick, Federal Reserve Bank of Minneapolis

participants were less likely to require remedial or special education. While the program cost about \$13,000 per child (in 2002 dollars), the benefits (\$4 for every \$1 spent) far exceeded the cost of the program. Furthermore, since the Abecedarian Project was conducted in a middle-income community (in North Carolina), researchers analyzing the cost-benefits of this program conclude that the pay-offs would, in fact, be much greater in lower-income, high-crime neighborhoods.³⁷

One study examining the long-term effects of the Perry Preschool Program found that for every dollar invested in the program, the return on investment was more than \$17.³⁸ A more conservative estimate was offered by the RAND Corporation in a study examining the expected costs and benefits of implementing a universal preschool program in California. The study concludes that for every \$1 invested by the public sector in a one-year, high-quality preschool program, \$2.62 could potentially be generated in returns.³⁹

Additionally, while research shows that participants clearly benefit from early education programs, the total benefits gained by the general public are even larger—through less crime, less dependency on welfare and more taxable income. A Federal Reserve Bank of Minneapolis analysis found that the rates of return (adjusted for inflation) on public investments in the High/Scope Perry Preschool Program were 4 percent for participants, but 12 percent for the general public.⁴⁰ Similarly, the Perry Preschool study found that for the \$17 return, \$12.90 was the return to the general public, while \$4.17 was the return to the participant. Eighty-eight percent of this return came from crime savings, 4 percent

³⁶ An investment in a project can be justified if its benefit-cost ratio exceeds 1-to-1. Source: Robert Lynch, “Exceptional Returns: Economic, Fiscal and Social Benefits of Investment in Early Childhood Development,” Economic Policy Institute, 2004.

³⁷ Leonard Masse and Steven Barnett, A Benefit Cost Analysis of the Abecedarian Early Childhood Intervention, National Institute of Early Education Research, 2002.

³⁸ Lawrence Schweinhart et al, Lifetime Effects: The High/Scope Perry Preschool Study Through Age 40, Ypsilanti, MI: High/Scope Press, 2005.

³⁹ Lynn A. Karoly and James H. Bigelow, The Economics of Investing in Universal Preschool Education in California, Prepared for the David and Lucille Packard Foundation, RAND Labor and Population, 2005.

⁴⁰ Robert Lynch, “Exceptional Returns: Economic, Fiscal and Social Benefits of Investment in Early Childhood Development,” Economic Policy Institute, 2004; Art Rolnick and Rob Grunewald, “Early Childhood Development: Economic Development with a High Public Return,” *Fedgazette*, a publication of Federal Reserve Bank of Minneapolis, March 2003.

came from educational savings, 7 percent from increased taxes from higher earnings and 1 percent from welfare savings.⁴¹

Many of the studies discussed above, while showing strong returns on investments, do not monetize the value of indirect benefits in their analyses. For example, the cost-benefit projected by RAND in its analysis on universal preschool in California does not take into account such indirect benefits as lessened crime, lower rates of child abuse and neglect, reduced reliance on welfare, improved labor markets and improved health and

“People who participate in enriched early childhood programs are more likely to complete school and much less likely to require welfare benefits, become teen parents or participate in criminal activities. Rather, they become productive adults.”

James Heckman, University of Chicago (and 2000 Nobel laureate in economics)

well-being. Broader benefits in the form of labor force recruitment, employment participation, workforce performance, economic growth and international competitiveness are also expected as byproducts of early educational investments.⁴²

Conclusion—While there is plenty of evidence to show the correlation between quality intervention and early education programs on child and family outcomes, studies suggest there is still room for improvement. Due to a lack of adequate

funding and resources, too many early childhood programs are not staffed by educated, qualified and well-trained professionals, exceed the recommended group size and ratios, and do not provide children with the support they need to develop socially, emotionally and cognitively.

Additionally, investment in such programs usually falls to the bottom of the priority heap. Many policy makers still view early childhood policies too narrowly focusing on immediate school readiness and ignoring the healthy development of infants and toddlers. Furthermore, although public sector investments in K-12 education have been justified as critical to the future of this country, the same urgency is not applied to younger children in spite of the vast amounts of evidence that points to this need.

In order to create a robust, high-quality system for all children, federal and state governments need to make an investment in early childhood development and intervention programs, providing adequate subsidies for low-income parents, ensuring smaller class sizes and optimal adult-child ratios, increasing educational attainment and training for early care workers, and providing equitable compensation for professionals. Furthermore, states need to develop birth to age five systems that will more effectively meet the needs of all children, regardless of socio-economic background and family

⁴¹ Lawrence Schweinhart et al, *Lifetime Effects: The High/Scope Perry Preschool Study Through Age 40*, Ypsilanti, MI: High/Scope Press, 2005.

⁴² Lynn A. Karoly and James H. Bigelow, *The Economics of Investing in Universal Preschool Education in California*, Prepared for the David and Lucille Packard Foundation, RAND Labor and Population, 2005.

characteristics, to ensure that all children and families are better prepared to succeed in school and later in life.

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